

OCCASIONAL PAPERS OF THE MUSEUM OF
ZOOLOGY

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A NOTE ON THE SPECIES OF EVERMANNICHTHYS,
A GENUS OF SPONGE-INHABITING GOBIES

BY CARL L. HUBBS

In 1917 Radcliffe¹ described a new species of sponge-inhabiting goby from off the coast of North Carolina and from the west side of Florida. He named the species *spongicola* and referred it to the genus *Garmannia*.

In 1921 Hubbs² based a new genus, *Radcliffella*, on *Garmannia spongicola*. There is no reason to doubt the propriety of generically distinguishing the species *spongicola* from *Gobius paradoxus* Günther, which is the type of *Garmannia* Jordan and Evermann.

In the meantime, however, Metzelaar (1919), in a paper only recently received by us, had named a very similar goby from Curaçao *Evermannichthys spongicola*, new genus and species.³

¹ Radcliffe, *Proc. U. S. Nat. Mus.*, 52, 1917, p. 423, fig.

² Hubbs, *Occ. Pap. Mus. Zool., Univ. Mich.*, No. 99, 1921, p. 2.

³ Metzelaar, Report on the fishes, collected by Dr. J. Boeke in the Dutch West-Indies 1904-1905, with comparative notes on the marine fishes of tropical West Africa, The Hague, 1919, p. 139, figs. 39, 40; *Bijd. Dierk.*, 22, 1919, p. 141.

Evermannichthys spongicola and *Garmannia spongicola* cannot be separated generically. *Evermannichthys* therefore replaces *Radcliffella* as the generic name for these gobies. The two species, however, appear from the original descriptions to be different, the *spongicola* of Metzelaar differing from the *spongicola* of Radcliffe in having a more slender body, shorter maxillary, and more rays in the second dorsal fin.

The two species may therefore stand as follows.—

1. *Evermannichthys spongicola* Radcliffe.
2. *Evermannichthys metzelaari* Hubbs (new specific name).

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TWO NEW FRESHWATER SNAILS FROM
MICHIGAN

BY MINA L. WINSLOW

The forms described below were found in the course of field work for the Museum of Zoology of the University of Michigan. Both were submitted to Dr. Bryant Walker, to whom grateful acknowledgment is made for helpful criticism. For a discussion of the subspecies of *Planorbis antrosus* reference may be made to Dr. Walker's "Notes on *Planorbis* II: *P. bicarinatus*," in *The Nautilus*, Vol. XXIII, pp. 1-10, 1909. It is interesting to find still another distinct form of *P. antrosus* in the same general northern region from which the varieties *percarinatus*, *royalensis* and *portagensis* have already been listed.

***Planorbis antrosus jordanensis*, new subspecies**

Figs. 1-5

Shell with four and a half closely coiled whorls, upper surface decidedly flattened, concave, apical whorls deeply im-

mersed, funicular; umbilicus narrow, deeply funicular; superior and basal carinae each forming a distinct, prominent, rounded cord; whorls flat, almost straight-sided; lines of growth strong, revolving sculpture distinct; aperture large, somewhat descending, auriculate, higher than wide, angled at the carinae; lip thickened within, edge sharp, somewhat expanded at the outer edge. Altitude, 6.5 mm.; diameter, 11.5 mm.; height of body whorl in front of aperture, 4.8 mm.

Type Locality: South Arm of Pine Lake, about two miles north of East Jordan, Charlevoix County, Michigan.

Type Specimen: Museum of Zoology, University of Michigan, No. 27440. Cotypes in the collection of Bryant Walker.

This form combines features of at least two other varieties of *Planorbis antrosus*, but is typical of none of them. It is perhaps nearer to *portagensis* in size and general appearance, but differs from that form in having pronounced cords accenting the carinae, in flatter whorls, and in the wider angle which the upper edge of the aperture makes with the superior carina. It resembles *royalensis*, but differs from that subspecies in its smaller size, in the relatively smaller size and auriculate shape of the aperture, the two corded carinae, flatter whorls, and finer, more regular lines of growth.

The series shows some variation in the degree of descent of the aperture, resulting in some specimens in the aperture being applied to the lower half only of the body whorl. In twenty adult specimens the altitude varies from 7.5 to 5.8 mm., diameter from 13.1 to 11.5 mm., and altitude of the body whorl in front of the aperture from 5.0 to 4.3 mm.

Ferrissia michiganensis, new species

Figs. 6, 7, 8

Shell depressed, oval, slightly wider anteriorly, anterior and posterior margins broadly rounded, the latter slightly oblique

on the right side; right lateral margin slightly curved, left lateral margin more convex; the dorsal outline is flattened above posteriorly and slightly curved anteriorly, the greatest height being about in the centre of the shell, from which point it slopes slightly towards the apex and more rapidly towards the anterior margin, left lateral slope somewhat convex; the right lateral slope a little concave; apex blunt, slightly depressed, excentric, turned toward the right side, situated at about the posterior fourth of the length and about halfway between the median line and the right margin, radially striate; lines of growth rather strong and irregular, the anterior slope is obsolete radially rippled; light horn color.

Length 4.25 mm., width 2.75 mm., altitude 1 mm.

Type Locality: Willow Brook, west of Harbert, Chickaming Township, Berrien County, Michigan.

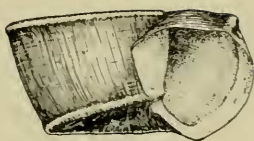
Type Specimen: Museum of Zoology, University of Michigan, No. 13057. Cotypes in the collection of Bryant Walker.

This well marked species is the largest yet described from the Northern States of the depressed group of *Ferrissias*. While nearly as large as many examples of *F. rivularis* and *F. tarda*, the depressed form and apex readily differentiate it from either.

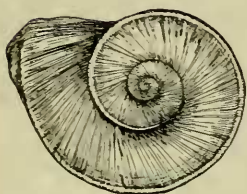
Numerous examples were collected from dead leaves and sticks in a small pond above a dam in the brook, in 1917, and again in 1918 and 1922. In the same pond numerous other species of freshwater snails were found, among them the small *Planorbis buchanensis* Lea, *Planorbis rubellus* Sterki, *Lymnaea columella* Say, *Lymnaea humilis modicella* Say, and others.

PLATE I

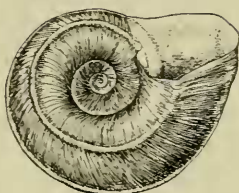
- Figs. 1, 2, 3. *Planorbis antrosus jordancensis*. Type. x 3.
- Fig. 4. *Planorbis antrosus jordancensis*. Cotype, Mus. Zool., Univ. of Mich., No. 27442. Most inflated specimen. x 3.
- Fig. 5. *Planorbis antrosus jordancensis*. Cotype, Mus. Zool., Univ. of Mich., No. 27441. Example of abruptly descending aperture. x 3.
- Figs. 6, 7, 8. *Ferrissia michiganensis*. Type. x 10.



1



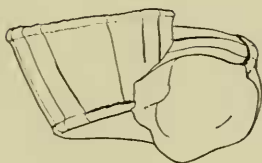
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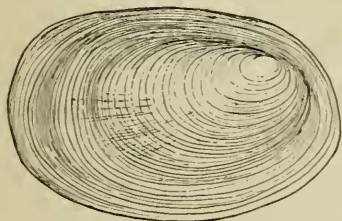
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TWO NEW SPECIES OF CISCO FROM THE
GREAT LAKES¹

BY WALTER KOELZ

Leucichthys alpenae, new species

Argyrosomus prognathus Evermann and Smith, Rept. U. S. Comm. Fish.
1894 (1896), p. 314-317 (in part).

Leucichthys johannae Jordan and Evermann, Bull. Bur. Fish., 29, 1909
(1911), p. 24-25 (in part).

This form, currently known as the "longjaw", is one of the largest species of *Leucichthys* found in the Great Lakes. Individuals not infrequently attain a length of 38 cm. (15 inches) and a weight of two pounds. The longjaws are well-flavored and moderately fat and are in demand by fish-smokers. The species occurs most abundantly at depths of less than 60 fathoms and is generally distributed throughout Lake Michigan and Lake Huron, including Georgian Bay, where suitable conditions obtain.

¹These descriptions are published with the permission of the U. S. Commissioner of Fisheries.

The type is a female specimen, to be deposited in the United States National Museum, 269 mm. in length to the base of the caudal, collected in Lake Michigan on June 15, 1923, 22 miles NNE of Charlevoix, Michigan, off Ile aux Galets, in 25-47 fathoms of water. Paratypes, deposited in the Museum of Zoology of the University of Michigan, were obtained in Lake Michigan off the Michigan shore on August 11, 1920, 14 mi. SE $\frac{1}{2}$ E, and on August 12, 1920, 15 mi. SE x S $\frac{1}{2}$ S of Manistique; on June 29, 1920, 5 mi. N x E, on June 15, 1923, 22 mi. NNE and on August 11, 1923, 3 mi. NW $\frac{1}{2}$ W of Charlevoix; on August 10, 1923, 8 mi. NNW of Big Rock Point, and on August 21, 1923, from an unknown location off Charlevoix; on June 22, 1920, 5 mi. NNW, and on July 31, 1923, 5 mi. NW of Cat Head Light; on July 30, 1923, off the South Manitou Island; on October 4, 1920, 9 mi. north of Point Betsie; and on March 20, 1919, 12 mi. west of Grand Haven. Other paratypes were taken off the Indiana shore on September 3, 1920, 22 mi. NW x N $\frac{1}{2}$ N, on October 11, 1920, 20 mi. N x W $\frac{3}{4}$ W, on November 8, 1920, 18 mi. NNW and on November 19, 1920, 17 mi. NNW and 17 $\frac{1}{2}$ mi. NW x N $\frac{3}{4}$ N of Michigan City; and off the Wisconsin shore on September 23, 1920, 27 mi. ESE of Milwaukee; on September 25, 1920, 18 mi. and also 5 mi. E $\frac{1}{2}$ S of Port Washington; on October 1, 1920, 11 mi. SE of Sheboygan; on August 24, 1920, 10 mi. E x N of Algoma; on August 23, 1920, 12 mi. E x S of the Sturgeon Bay Ship Channel mouth; on August 18, 1920, 4 mi. west of Boyer Bluff; and on August 19, 1920, 20 mi. E $\frac{1}{2}$ N of Rock Island. Specimens have also been taken in Lake Huron in Michigan waters off Cheyboygan, Rogers City, Alpena and Harbor Beach and in Canadian waters in Georgian Bay, off Lion's Head and Wiar-ton; these are not designated as paratypes, and are not involved in the following description.